ABSTRACT

A method of manufacturing a metallic film consisting of giant single crystal grains is disclosed. The method includes depositing the metallic film on a substrate under an atmosphere of an inert gas and a specified additive gas to change a surface energy, grain boundary energy, or internal strain energy of the metallic film. The method also includes annealing step of the resultant of the deposition at a temperature suitable for the grain growth of the metallic film containing the additive gases. According to the method, the metallic film consisting of giant single crystal grains having a grain size whose ratio of thickness to an average grain size of the film is above 50 can be produced without depending upon the kind of substrate and deposition method.